

Some Transportation and Communication Firsts in Hawaii

Robert C. Schmitt

Few aspects of Hawaiian life and technology have changed as dramatically as transportation and communication. The past two centuries have produced many new and revolutionary developments—the steamship, railroad, street car, automobile, freeway, parking meter, balloon, airplane, postage stamp, newspaper, telephone, and radio, to name some of the most important or ubiquitous.

Despite the significance of these innovations, in many cases little is known of their first appearance in the Islands. Standard historical works are often silent on the subject. For a surprisingly large number, conflicting claims (some clearly impossible) run through the literature. Sources are seldom mentioned.

Wherever possible, these “firsts” are traced in the following pages.

TRANSPORTATION

Ocean travel. On January 20, 1778, at Waimea, Kauai, Hawaiians saw their first recorded foreign ships, the *Resolution* and *Discovery*, commanded by Cook and Clerke.¹

The first vessel of foreign design to be built in the Islands was the 36-foot *Britannia*, designed and constructed by Vancouver's carpenters in February 1794 for Kamehameha's navy.²

The first whaleships to visit Hawaii were the *Balena* (or *Balaena*) out of New Bedford, commanded by Captain Edmund Gardner, and the 262-ton ship *Equator* from Newburyport, with Captain Elisha Folger as skipper. The two vessels arrived via California, anchoring in Kealahou Bay on September 29, 1819.³ The first whaleship to enter Honolulu Harbor was the *Maro*, of Nantucket registry under Joseph Allen, master, in 1820.⁴

“The first wharf constructed at this port was at a point a little to the northward of the foot of Nuuanu Street,” according to Thrum. Although the

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year was not recorded, "without doubt it followed closely upon the establishment of the house of Ladd & Co., about 1825 [sic]. This first wharf was composed of a sunken hulk that was hauled in and planted there. . . . In 1837 the hulk was removed and a substantial wharf built in its place."⁵

The first steamer to visit the Hawaiian Islands was the Hudson's Bay Company's *Beaver*, a 101-foot, 109-ton vessel built in England in 1835. The *Beaver* called at Honolulu en route to Fort Vancouver, entering the harbor on February 4, 1836, and sailing 22 days later. The passage from England was made by sail, under brigantine rig, and her paddle wheels were not fitted until she reached the Columbia River in April.⁶

The earliest vessel actually to steam into Island waters was the H.B.M. *Cormorant*, Sir George W. Gordon, Commander, which arrived at Honolulu from Callao on May 22, 1846. "This is the first steamer ever arrived here, and the natives were in a state of great excitement," reported C. S. Lyman. "She came up very slowly, with little motion of the wheels and little smoke visible."⁷

The earliest lighthouse in Hawaii was one built at Keawaiki, Lahaina, and put into operation on November 4, 1840. It was described as a "tall looking box-like structure, about nine feet high and one foot wide . . . facing the landing."⁸ Other early lighthouses were constructed at Kawaihae in 1859, again at Keawaiki in 1866, and on Kaholaloa Reef at the entrance to Honolulu Harbor in 1869.⁹

Scheduled interisland service was introduced in 1851, "when two schooners ran passengers, cargo and mail between Honolulu and Lahaina on an alternating basis, with departures from Honolulu on Tuesdays and Fridays, respectively," but the service proved undependable.¹⁰

Late in 1853, the Hawaiian Steam Navigation Company inaugurated the first scheduled interisland steamer service, using a 106-foot, 114-ton side-wheeler renamed *Akamai*. Frequently laid up, the *Akamai* was retired permanently in April 1857. The company was subsequently reorganized, and on June 28, 1860, its new 399-ton screw steamer *Kilauea* arrived in Honolulu. Thereafter steam navigation on this run operated on a relatively regular basis.¹¹

Scheduled sailing packet service between Hawaii and the Mainland was introduced in 1855 by the Regular Dispatch Line, which nine years later was joined by the Hawaiian Packet Line. Between the two lines, six fast sailing vessels provided cargo and limited passenger services.¹²

The California Steam Navigation Company began a regular trans-Pacific passenger and cargo service with the steamer *Ajax*, which arrived in Honolulu on January 27, 1866, but after two unprofitable voyages the operators gave up. A permanent scheduled steamer service connecting San Francisco and Honolulu was finally inaugurated by the California, Oregon and Mexico Steamship Company, with the Honolulu docking of its SS *Idaho* on September 17, 1867.¹³

"The first cargo ship passing westward through the Panama Canal to call at Honolulu" was the American Hawaiian Steamship Company's SS *Missourian* commanded by Captain Wm. Lyons, on September 16, 1914.¹⁴

The first submarines permanently homeported in Hawaii were the U.S. Navy's *F-1* and *F-3*, which arrived under tow on August 1, 1914, and the *F-2* and *F-4*, on August 24. The first submarine disaster in American naval history occurred on March 25, 1915, when the *F-4* sank in 306 feet of water off Honolulu Harbor, with the loss of all 21 officers and men on board.¹⁵

"Containerized cargo shipments began in August, 1958," according to Gibbs. "Several C-3 freighters were altered to carry containers on deck in the first phase of the program. The converted *Hawaiian Citizen*, with a capacity for 436 24-foot containers, entered service in April, 1960, as the first all-container carrier in Pacific trade."¹⁶

"Roll-on roll-off" trailership service was introduced in September 1973, when Matson Navigation Company added two specially designed 25,000-ton vessels to the West Coast-Hawaii fleet to supplement the lift-on lift-off container-vessels. The new ships bore traditional company names, *Lurline* and *Matsonia*.¹⁷

On June 15, 1975, Sea Flite made its first scheduled interisland passenger trip by hydrofoil, taking 120 persons from Honolulu to Maalaea, Maui, on its 92-foot, 191-passenger, 45-knot *Kamehameha*.¹⁸ Service by the three jetfoil vessels in the fleet was discontinued on January 15, 1978.¹⁹

Railroads. "What appears to be the earliest island railroad installation," according to Condé and Best, was a track only a couple of hundred feet in length, built in Honolulu in 1857 to remove material dredged from the harbor. Another railway was erected on the pier at Kawaihae in 1858.²⁰

The Kahului & Wailuku Railroad began passenger service on Maui on July 20, 1879, thus initiating the first rail common carrier in the Islands. The earliest steam locomotives were those operated by the Kahului Railroad and a short line at Hilo, the latter initially mentioned in January 1880.²¹

Streets and highways. Fort Street was macadamized from the waterfront to Kukui Street early in 1881, thus becoming the first paved thoroughfare in Hawaii. On February 12, 1881, the *Advertiser* commented: "The improvement in the road-way in Fort Street being completed, Mr. Supervisor Hart intends to effect a similar good work in Nuuanu Street, commencing at Queen Street. The construction of well-macadamized road-ways in its principal streets ought to mitigate one of the summer plagues of this city."²²

Sidewalks were constructed as early as 1838.²³ The first sidewalk made of brick was laid down in 1857 by a watchmaker named Samuel Rawson, whose small shop was on the lower side of Merchant Street between Fort and Kaahumanu.²⁴

"The first tunnel ever constructed on a public highway in Hawaii" was built on the Olowalu-Pali section of the Lahaina-Wailuku Road, completed on October 10, 1951. The tunnel was 286 feet long, 32 feet wide, and more than 22 feet high.²⁵

The first freeway constructed in Hawaii was the Mauka Arterial, later called Lunalilo Freeway. The three *ewa*-bound lanes of the six-lane divided highway, extending a distance of one mile between Old Waialae Road and Alexander Street, were opened to traffic November 9, 1953.²⁶ The Kaimuki-bound lanes

along the same stretch were opened and the highway was formally dedicated on January 5, 1954.²⁷

Street cars and buses. The earliest public transit was the Pioneer Omnibus Line, with a horse-pulled vehicle serving parts of Honolulu for a few years beginning in the spring of 1868.²⁸

On December 28, 1888, Hawaiian Tramways, Ltd., started mule-car service with four open cars, bringing what was later described as "Honolulu's first real transit service." The company later was taken over by the Honolulu Rapid Transit & Land Co. (HRT), making its last run on December 23, 1903.²⁹

The first electric street cars were those of the Pacific Heights Electric Railway Co., Ltd., connecting upper Nuuanu Avenue and Pacific Heights. Using two open-sided 30-passenger cars (plus two freight/mail cars), this line functioned from November 1900 until 1904 or 1906.³⁰

Bus service was inaugurated by HRT in 1915, initially using locally built bodies and later ACF buses from the Mainland, acquired in 1928. Trolley buses operated on a number of HRT routes from January 1938 to the spring of 1958. Electric street cars, first used by HRT on August 31, 1901, were withdrawn early in the morning of July 1, 1941.³¹ The company suspended all service after December 31, 1970, because of a labor dispute, and was succeeded a few months later by MTL, Inc., operated under contract to the City and County of Honolulu.³²

Bicycles and motorcycles. The first bicycle in Hawaii (called a "velocipede") arrived in January 1869.³³ The first "safety" bicycle seen in the Islands, a Columbia, came in 1892.³⁴

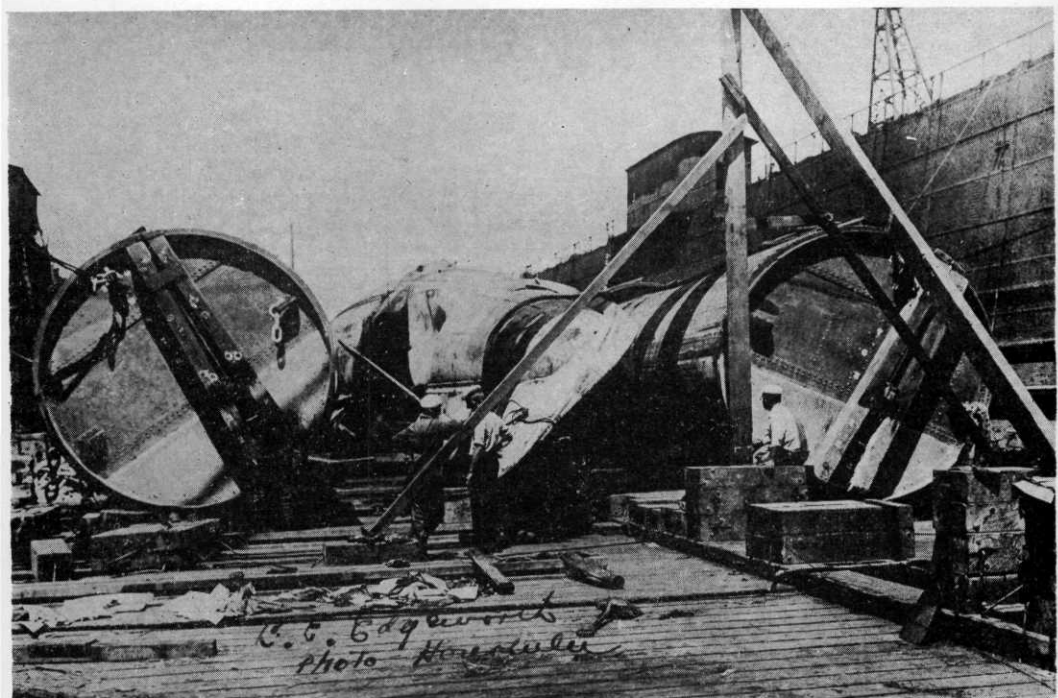
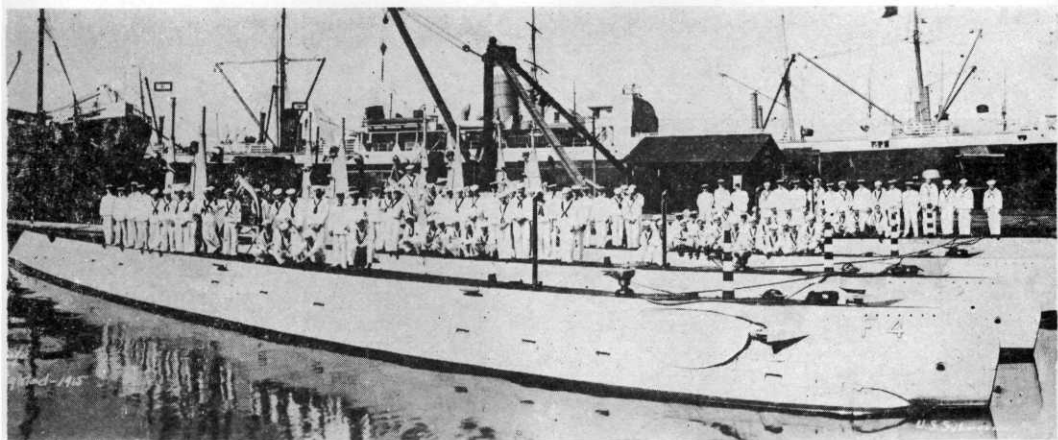
Motorcycles were apparently first brought to Hawaii in February 1901, although a 1902 introduction has also been reported.³⁵

Automobiles. The first automobiles appeared on the streets of Honolulu on October 8, 1899, the date on which both Henry P. Baldwin and Edward D. Tenney took possession of their newly arrived vehicles. The *Advertiser* reported the next day that "Hon. H. P. Baldwin's automobile, the first to be seen in the Hawaiian Islands, was given its first trial yesterday afternoon . . . [on] King street and out along Punahou street. . . ."³⁶ The *Bulletin* noted that "E. D. Tenney's automobile, which with H. P. Baldwin's were the first to arrive in Honolulu, was tried for the first time Sunday afternoon [October 8, 1899] by the owner. . . ."³⁷ Both cars were later described as Wood electrics.³⁸

Notwithstanding this evidence, reported in all three English-language dailies, the owner, make, and year of the earliest automobile in the Islands remain matters of considerable controversy and confusion. Several sources

Top: *The first submarines assigned to Hawaii arrived in 1914 and lined up for this dockside photograph early in the following year. The F-4, nearest the camera, soon thereafter sank off Honolulu Harbor, in America's first submarine disaster. Hawaii State Archives.*

Bottom: *The remains of the F-4, lost in 50 fathoms with 21 aboard, were finally recovered and brought ashore in August 1915, almost five months after the tragedy. Hawaii State Archives.*





refer to a Wood electric supposedly imported by C. J. Hedemann in 1898.³⁹ At the time of his death in 1931, Dr. F. L. Miner was described as "the first Honolulu resident to own an automobile."⁴⁰ Other sources mention a Rambler, the "first gas-engined automobile complete with steering wheel and tonneau," acquired by C. M. Cooke in 1904, and the Honolulu Automobile Club later adopted this date for the "first real automobile" in the Islands.⁴¹ Norwood quoted a 1901 date, and Thrum twice gave the year for Hawaii's first automobile as 1890.⁴² The Hawaii State Archives contain photographs of three different automobiles captioned "first."⁴³

The first truck ever seen in Hawaii was a Reo purchased in 1912 by City Transfer Co. Its two-cylinder engine developed 16 horsepower and permitted speeds up to 20 miles per hour.⁴⁴

Taxis and U-drive motor cars were introduced by the Hawaiian Automobile Company on March 9, 1901, almost 15 months after the initial announcement of the company's plans. The company brought in approximately 25 electrics, for use either as hacks or self-driven vehicles. Their advertised range of 25 miles without recharging proved somewhat optimistic, and the automobiles were found to be very undependable. The firm suspended operations on June 24, 1901, and in October a warehouse fire destroyed 22 of its fleet.⁴⁵

The earliest recorded accident (or near-accident) involving an automobile occurred near the intersection of Kalakaua Avenue and South King Street on March 17, 1900. Two unidentified bicyclists "were coming from Waikiki to the city and had slowed down to make the turn into King street when with a whirr of machinery a horseless carriage dashed around the corner. . . . The frightened man and wife on wheels saw that only instant action could save them. They headed for the fence and found immunity from the Juggernaut in the ditch. . . . When the badly scared couple had gathered themselves up the automobile was but a cloud of dust." The cyclists were unable to identify the lone motorist, but one of them noted, " 'He had whiskers. I saw them filled with dust and floating in the wind just as I scrambled for the fence.' "⁴⁶ At that time there were only four automobiles in Honolulu, three propelled by electricity and one by steam.⁴⁷

The first recorded motor vehicle death in Hawaii occurred six years later, on June 4, 1906. Louis Marks and three passengers, descending an Aiea driveway in reverse, backed their car, a Winton, over a 20-foot embankment. The vehicle made a complete somersault and fell on top of Marks, killing him instantly. Charles A. Bon was seriously injured, but both wives were thrown clear.⁴⁸

The Marks accident was only one of many reported in 1906, but none of the others appears to have had fatal consequences. At least six of the ninety motor cars on Oahu were involved in major accidents that year.⁴⁹

The end of the first civilian flight from the mainland. Smith and Bronte's single engine Travelair, City of Oakland, after it landed in a Molokai kiaue tree, July 15, 1927. The two airmen were unhurt. Hawaii State Archives.

Hawaii's first automobile theft took place the evening of July 4, 1900. Spying Louis Grant's electric horseless carriage parked on Beretania Street near Fort, Pat Corcoran (a fireman who "had been celebrating the Fourth") jumped in and tried to start the motor. Unsuccessful in this effort, he then tried pushing the vehicle down the street, eventually leaping aboard and randomly moving the controls. When these maneuvers likewise failed to start the car, Corcoran contented himself by ringing its bell. A policeman who had witnessed these events gave chase and collared the would-be thief under the hose wagon in the fire station. "Judge Wilcox concluded that Corcoran had tried to elope with the auto and fined him \$25 and costs," reported the *Advertiser*.⁵⁰

What may have been the earliest recorded Honolulu traffic count was likewise reported in 1900, when a newspaper article noted: "It has been estimated that 3,594 vehicles pass the interesection at Fort and Queen streets from 7 a.m. to 5 p.m. . . ." ⁵¹

The first traffic lights in the Islands were installed at the intersection of Nuuanu Avenue and Beretania Street, Honolulu, in 1936. An overhead signal was put into operation February 19. On February 24 the overhead lights were "replaced by side bracket lights, flashing the green go and red stop light from a post at each corner." The new lights were "operated by the flow of traffic itself."⁵²

The first parking meters in Hawaii were those installed by the Hawaii Aeronautics Commission in the parking lot at Honolulu International Airport in August 1951. Numbering 101, these meters required one cent for 12 minutes or five cents an hour.⁵³ The Honolulu central business district did not have on-street parking meters until February 1, 1952.⁵⁴ The earliest public off-street parking facility operated by the City and County of Honolulu was one opened at Beretania and Smith Streets on December 19, 1952.⁵⁵

Air Travel. The first balloon flights in Hawaii were unmanned. An entry in Andrew Bloxam's diary, written in Hilo on June 22, 1825, notes that the officers and men of the *Blonde* delighted "a big audience of natives" by setting off "some rockets, and a paper air balloon, but the latter caught fire almost immediately and falling on Lord Byron's grass house was near setting it in flames." A more successful effort occurred late in 1840, while Hannah Holmes was entertaining sixty officers of the American exploring expedition then visiting Honolulu. At ten, she summoned her guests outside to watch the exciting ascension of a great balloon filled with hot air—perhaps the earliest record of such an event on Oahu. In July 1858, Honolulu residents watched a number of illuminated balloons (one measuring 28 feet in diameter) sent into the air from the Commercial Hotel by its proprietor, Henry Macfarlane.⁵⁶

Manned balloon flights were first attempted in 1889. On March 2, Emil L. Melville unsuccessfully tried to make a hot-air balloon ascension from Kapiolani Park. A week later, he tried again in Iwilei. This time he was dragged through a kiawe thicket, carried about three hundred yards at rooftop level, and finally forced to leap to the ground from a height of thirty feet. In a July 4

attempt from the slopes of Punchbowl, the balloon caught fire on take-off. With Melville dangling 12 or 14 feet below at the end of a rope, the inflated bag shot to an altitude of nearly 2,000 feet, then began a rapid descent. As it came to a stop in a Kakaako kiawe tree, the balloonist jumped, landing unhurt in a bed of deep mud.⁵⁷

The first fully successful balloon ascent in Island history took place November 2, 1889, when Joseph Lawrence Van Tassell took off from Kapio-lani Park, rose to an altitude of one mile, and then came to earth by parachute. On November 18, he tried to duplicate this feat in an ascent from Punchbowl, but the wind carried him off course and he parachuted into Keehi Lagoon and drowned. Van Tassell thus appears to have been Hawaii's first successful flyer, its first parachutist, and its first air fatality.⁵⁸

The first airplane flight was one made by J. C. "Bud" Mars, who flew a Curtiss P18 biplane from Moanalua Polo Field on December 31, 1910. Mars made four flights that afternoon, rising to an altitude of 500 feet the first time and 1,500 feet the last. Additional flights followed on January 1 and 2.⁵⁹

Clarence H. Walker, piloting another Curtiss biplane, veered into a hala tree while landing at Hilo with a coughing engine, on June 10, 1911. This was the first airplane crash in Island history.⁶⁰

The first locally produced airplane was one built by Gus Schaefer. Piloted by Burton H. Dryer at Leilehua on January 1, 1912, it reached an altitude of 40 feet and then hurtled to earth, sending Dryer to the hospital.⁶¹

Flying a biplane at Schofield Barracks, Tom Gunn took up the first airplane passengers—a local tailor and a young lady ticket taker in the Empire Theater—on July 13, 1913. The first paying passenger was a Mrs. Newman of Honolulu, who on October 2, 1913, paid \$25 for a 15-minute flight over Honolulu Harbor with Gunn.⁶²

The earliest military aircraft (two Curtiss seaplanes) and aviation personnel arrived in Hawaii (by ship) on June 13, 1913. The U.S. Army's Hawaiian Air Office was activated November 20, 1916.⁶³

The first airmail flight in Hawaii occurred on Kauai in 1914. Tom Gunn reportedly carried souvenir postcards and letters on an experimental flight from Koloa, presumably to Lihue.⁶⁴

The earliest interisland flights were made by Major Harold M. Clark of the Fort Kamehameha Aero Squadron. On March 15, 1918, Clark successfully flew to Molokai and back. On May 9, he and Sgt. Robert P. Gray set out on a sea plane flight to Hilo, via Maui. After stopping at Kahului, they headed for the Big Island, but became lost in dense cloudbanks and fog and landed late at night in the tree tops of the upper Kaiwiki forest near Hilo. Hungry but unhurt, they emerged from the forest two days later.⁶⁵

The first interisland airmail flight took place on July 3, 1919. Two Army seaplanes, commanded by Lt. Col. B. H. Atkinson and Major J. B. Brooks, left Luke Field, Pearl Harbor, at 9:10 a.m. for Hilo with a bag of mail, and reached the crescent city shortly after 1:00 p.m. without mishap. The return trip was made four days later.⁶⁶

"The island's first aeroplane fatality," reported Thrum, "is to be recorded in the death of Corpl. Mark B. Grace of the 6th Aero Squadron, Ft. Kamehameha, which occurred Nov. 19th [1918], by a fall of his plane at 10 a.m. within the fortification from a height of 3,500 feet, through failure to come out successfully from a 'tail-spin' maneuver." The pilot, Second Lieut. Cary Crowdes, "miraculously escaped with comparatively slight injuries."⁶⁷

Although simple landing strips were built at Schofield Barracks and elsewhere in the earliest years of Island flying, Hawaii did not have a formally established airport until Luke Field was dedicated on April 29, 1919. Located on Ford Island, Luke Field was developed after September 1917 as a joint Army and Navy air facility.⁶⁸ John Rodgers Airport (later renamed Honolulu International Airport) was built in part with funds appropriated by the 1925 Territorial Legislature and was dedicated on March 21, 1927, thus becoming the first formally designated civilian airfield in Hawaii.⁶⁹

The first flight between the Mainland and Hawaii took place in 1925. Flying a two-engine PN-9 Navy seaplane, Commander John Rodgers and a crew of four left San Pablo Bay (near San Francisco) August 31, and managed to reach a point 300 miles from Maui before running out of gas. With improvised sails, the plane floated the rest of the way, reaching Ahukini Harbor, Kauai, on September 10.⁷⁰

Lt. Lester J. Maitland and Lt. Albert F. Hegenberger flew a U.S. Army Fokker C-2-3 Wright 220 trimotor, *Bird of Paradise*, from Oakland to Wheeler Field on June 28-29, 1927. This was the first fully successful flight between the West Coast and Hawaii.⁷¹

The pioneering civilian flight over this route was made on July 14-15, 1927, by Ernest L. Smith and Emory B. Bronte. The two men took a single-engine Travelair monoplane, *City of Oakland*, from Oakland Airport to Kamalo, Molokai, where they ran out of fuel and landed in a cluster of kiawe trees.⁷²

The first complete crossing of the Pacific by air took place in 1928, when Charles Kingsford-Smith and his crew of three flew their Fokker tri-motor, *Southern Cross*, from California to Australia by way of Hawaii and Fiji. They left Oakland Airport on May 31 and reached Wheeler Field on Oahu the following morning. Following a short hop to Barking Sands, Kauai, they took off on June 3 for Suva and Brisbane, and on June 10 ended their journey at Sydney. Six years later, Kingsford-Smith and Patrick Gordon Taylor repeated this crossing but in the opposite direction. Flying a single-engine Lockheed Altair, *Lady Southern Cross*, they left Brisbane in mid-October 1934, and after stops at Suva and Honolulu landed in Oakland on November 3. The last leg of this flight, from Wheeler Field to Oakland Airport, was the first eastbound flight between Hawaii and the Mainland.⁷³

The first interisland airline was Hawaiian Airways, Ltd. This tiny outfit "began operation November 9, 1929, with two Kreutzer Tri-Motor Monoplanes and made more or less regular trips between the Islands and many sight-seeing tours," according to an official account. The firm suspended regular service in January 1930 and went out of business the following June.⁷⁴

The first full-scale local airline was Inter-Island Airways, Ltd. (now

Hawaiian Airlines), which inaugurated scheduled operations on November 11, 1929, using two Sikorsky S-38-c 7-passenger amphibians and a Bellanca monoplane.⁷⁵

Inter-Island was awarded an airmail contract on September 20, 1934. Regular airmail service between the Islands began on October 8.⁷⁶

On January 11-12, 1935, Amelia Earhart made the first solo flight between Hawaii and the Mainland. She flew a single-engine Lockheed Vega monoplane, taking off from Wheeler Field and landing 18 hours and 15 minutes later at Oakland Airport.⁷⁷

The first airmail flight linking the West Coast with Hawaii occurred November 22-23, 1935, when a Pan American Airways Martin M-130 4-engine flying boat, *China Clipper*, flew from Alameda to Pearl Harbor. The next day it continued westward, to Midway, Wake, Guam and Manila.⁷⁸

On October 21, 1936, Pan American initiated regular weekly passenger service between San Francisco and Manila via Honolulu. Seven passengers made the inaugural flight on the *Hawaii Clipper*, leaving Alameda at 3:11 p.m. and docking at Pearl City at 7:54 the following morning, October 22. The one-way fare between Honolulu and the West Coast amounted to \$360.⁷⁹

On December 13, 1955, a British Overseas Airways Corp. De Havilland Comet III jet airliner arrived at Honolulu International Airport on a good will flight around the world, thus making it "the first civil airport in the nation to get a preview of commercial jet aircraft operation." The Comet remained in Honolulu for two days and gave a series of courtesy flights to government officials, aviation and tourist people.⁸⁰

Commercial jet aircraft service was introduced to Hawaii in 1959. Qantas Empire Airways began jet service on July 29, connecting Sydney, Nadi, Honolulu, and San Francisco with Boeing 707 aircraft. Pan American, the first domestic carrier to use jet airplanes on the Honolulu run, inaugurated 707 service between the West Coast and Tokyo via Honolulu and Wake on September 5. United Air Lines began its DC-8 jet service to the Islands in March 1960.⁸¹

Space travel. Several astronauts made their first landfalls in Hawaii after splashing down in the Pacific Ocean. Walter M. Schirra circled the earth six times in his Sigma 7 spacecraft before dropping into the water 1,300 miles northwest of Hawaii. He was picked up by the carrier *Kearsarge* and then flown to Hickam Air Force Base for a three-hour layover on the morning of October 6, 1962. About 1,000 Islanders greeted him.⁸² On July 26, 1969, the first humans on the moon, Neil A. Armstrong, Edwin E. Aldrin, Jr., and Michael Collins, arrived at Pearl Harbor aboard the carrier *Hornet*, which had picked them up after the splashdown of their Apollo 11 craft, *Columbia 3*. Sealed in a quarantine van, the three astronauts were transferred to Hickam and flown to Houston.⁸³

COMMUNICATIONS

Postal service. "The earliest recorded piece of Hawaiian postal matter" was a letter written by Sybil Bingham, a member of the first group of missionaries,

from "Hanaloorah, Woahoo," on June 27, 1820, to Mrs. Fanny Howell of Canandaigua, N. Y. The letter was carried privately by ship to Boston, arriving on March 22, 1821, and thence by regular mail to its destination.⁸⁴

The second of the three "organic acts" of 1845-1846 provided for the establishment of a postal system, but four years elapsed before the law was implemented. Equally important was the treaty, signed December 20, 1849, to take effect the following August, providing for the exchange of mail between the United States and Kingdom of Hawaii. The first bag of mail received from San Francisco under this agreement arrived in Honolulu early in December 1850. The first eastbound bag under the same arrangement appears to have left Honolulu around November 7, 1850.⁸⁵

On December 20, 1850, the Privy Council issued a "Decree Establishing a Post Office in Honolulu," to be located for the time being in the office of *The Polynesian*, and naming Henry M. Whitney, Esq., as postmaster.⁸⁶

"The earliest postmark known on mail from Hawaii" was a straight-line handstamp reading *Honolulu, Hawaiian Is.* with movable date. The oldest extant example of its use is dated November 7, 1850.⁸⁷

On June 18, 1851, the Privy Council issued a decree which, among other provisions, authorized the postmaster to put out stamps of appropriate denominations. The first stamps issued under this decree were the two-, five-, and thirteen-cent "Missionaries" printed in the government printing office and first put on sale October 1, 1851. The earliest perforated Hawaiian stamps were a two-cent issue, in sheets of 50, printed on the Mainland and received in Honolulu in May or June 1864.⁸⁸

A newspaper account of the opening of the four-story Judd Building, March 15, 1899, noted that "a mail chute, the first in these Islands, forms one of the conveniences."⁸⁹

Printing and publishing. Printing was introduced on January 7, 1822, in a grass-roofed hut on the mission grounds about half a mile from the village of Honolulu. The press was an old Ramage model of iron and mahogany, hauled around Cape Horn in the brig *Thaddeus*. The printer, 20-year-old Elisha Loomis, composed two pages of type for an elementary spelling book, and Chief Keeaumoku of Maui made the first impression.⁹⁰

The first and most popular publication of the mission press was the spelling book called *Ka Pi-a-pa* or *Ka Bi-a-ba* ("The Alphabet"), issued in an edition of 500 copies by the end of January. Originally appearing in 16 pages, this primer was soon reduced to eight because of a shortage of paper.⁹¹

The first printed government document was dated March 8, 1822. It consisted of two "notices" proclaiming royal laws to control the behavior of sailors and other foreigners.⁹²

What has been described as the "first real book" published in the Islands was a 60-page hymnal, *Na Himeni Hawaii*, prepared by William Ellis and Hiram Bingham and issued in October 1823. It contained the lyrics to 47 songs, many of them original. The earliest printing of lines of music was in *Hawaiian Hymns and Music*, which appeared in 1837.⁹³

The first commercial job printing took place on December 9, 1824, when the mission press ran off 220 blank bills of lading for Dixie Wilds, a merchant.⁹⁴

The earliest translation from Holy Scripture was a leaflet containing the 100th psalm, distributed at the dedication of Kawaiahao Church on November 19, 1825. The first Hawaiian edition of the New Testament was completed in 1832 and the entire Bible—*Ka Palapala Hemolele*, in three volumes and 2,331 duodecimo pages—was in print by May 10, 1839.⁹⁵

The first newspaper published in Hawaii was *Ka Lama Hawaii* ("The Hawaiian Luminary"), a four-page Hawaiian language weekly issued by the press of Lahainaluna Seminary from February 14, 1834 to December 26, 1834. Intended primarily for the students, it was edited by Rev. Lorrin Andrews, illustrated with woodcuts, and printed in editions of 200 copies each. A second Hawaiian language newspaper, *Ke Kumu Hawaii* ("The Hawaiian Teacher"), was printed at the mission press in Honolulu, appearing at semi-monthly intervals from November 12, 1834 to May 22, 1839.⁹⁶

The first paper money engraved in Hawaii was likewise printed at Lahainaluna, beginning in 1843. It consisted of heavy squares in denominations ranging from three cents to one dollar, intended for use inside the school.⁹⁷

The earliest English language newspaper was the *Sandwich Island Gazette and Journal of Commerce*, a four-page weekly published in Honolulu beginning July 30, 1836, and continuing until July 27, 1839.⁹⁸

The first quarterly review in the Pacific region was the *Hawaiian Spectator*, issued in Honolulu from January 1838 to October 1839.⁹⁹

The first lithographic press in the Pacific was installed at the Lahainaluna printing plant in 1846.¹⁰⁰

The first daily newspaper in the Islands was *The Daily Hawaiian Herald*, which was initially published on September 4, 1866, and suspended on December 21 of the same year.¹⁰¹ The first issue of the *Daily Bulletin* to be printed—it had its origin in a manuscript sheet of marine news displayed daily at the post office—appeared February 1, 1882. At first a one-page publication distributed without charge, on April 24, 1882, it became a full-fledged four-page daily. The *Pacific Commercial Advertiser*, a weekly established on July 2, 1856, was transformed into a daily on May 1, 1882.¹⁰² No Sunday editions were published, however, until the first issue of the *Sunday Advertiser*, on January 4, 1903.¹⁰³

Telegraph. On June 12, 1857, a marine telegraph was put into operation at Diamond Head. This device was actually a kind of semaphore designed to send visual (rather than electric) signals to the post office in downtown Honolulu when an approaching ship was sighted.¹⁰⁴

True telegraphy, involving the electric transmission of coded messages through wires, seems to have reached Honolulu some fifteen years later. On October 19, 1872, the *Advertiser* reported: "THE TELEGRAPH.—The line connecting Mr. Rawson's store and Mr. Eckart's jewelry manufactory, is now in successful operation, and a crowd of the curious have been flattening their noses against Kinney's front window to see the machine work. For the sake of satisfying everybody, messages will be sent over the wires for a few days

from 12:30 to 1 o'clock P.M., when anyone can witness their transmission."¹⁰⁵ S. K. Rawson (mentioned earlier in connection with the first brick sidewalk) was listed by the 1869 Honolulu directory as a watchmaker and jeweler located on the *makai* side of Merchant Street between Kaahumanu and Fort Streets. C. Eckhart (the directory spelling) was referred to as a jeweler on the *mauka* side of Beretania Street, between Nuuanu Avenue and Fort Street. The direct distance between the two locations was about 1,500 feet.¹⁰⁶ This private telegraph line was reportedly put into operation on October 17 and "abandoned only on the dissolution of the firm" several months later.¹⁰⁷

The earliest commercial telegraph system in the Hawaiian Islands was constructed in 1877 and 1878 on Maui. On September 1, 1877, the *Advertiser* printed a letter from its correspondent at Makawao, which stated: "Mr. C. H. Dickey has just completed a line of telegraph from his place at Haiku to his store in Makawao—a distance of about five miles. The first telegram, '*God save the King!*' was sent over the wire on the 23d of July, 1877. Mr. Dickey has succeeded in making arrangements to continue the line to Wailuku, and it is sincerely hoped that there will be enough live men to be found there to run the wire over the mountain to Lahaina." This first line connected Dickey's store in Haiku (not his "dwelling-house," as started in an adjoining editorial) with his store in Makawao, the latter operated by his associate, Mr. C. H. Wallace, who like Dickey was a former telegrapher.¹⁰⁸ Soon thereafter Dickey and Wallace formed the Hawaiian Telegraph Company, with plans to connect Haiku, Makawao, Wailuku, and Lahaina, and eventually Honolulu.¹⁰⁹ On January 12, 1878, they requested a charter, which was granted on March 4.¹¹⁰ The Haiku-Wailuku link was put into operation on February 21, 1878; the extension to Lahaina, some five months later.¹¹¹

Telephone. The earliest telephone in Hawaii followed hard on the first commercial telegraph, and like the earlier device stemmed from the efforts of Charles H. Dickey on Maui. Many years later, Dickey wrote: "In 1878 I received a letter from my brother, J. J. Dickey, superintendent of the Western Union Telegraph at Omaha, describing the new invention. . . . Before the year was out . . . I sent for instruments and converted my telegraph line into a telephone line."¹¹² On April 11, 1878, Dickey submitted his application for a caveat (a kind of provisional patent), asserting his "intention to introduce into the Hawaiian Islands the Invention known as The Bell Telephone," but the Privy Council apparently failed to act on his request.¹¹³ Less than two weeks later, on April 24, 1878, a letter was sent to the *Advertiser* from Wailuku stating that "the East Maui Telegraph Company are about to introduce that new wonder of the age, the telephone."¹¹⁴ Identifying himself as "Agent for the Haw'n Is.," Dickey next inserted a small advertisement in the *Advertiser* for May 18: "THE BELL TELEPHONE. For cheap instantaneous Communication by Direct Sound. Information given and Telephones leased by C. H. DICKEY."¹¹⁵ Two weeks later he changed his advertisement to note that "a supply of telephones and call bells are expected in a few weeks which will be leased at New York rates."¹¹⁶ The Maui telephone system was apparently put into operation in May or June, 1878; a letter from Makawao, dated June

27, 1878, and printed in the *Advertiser*, boasted that "the telegraph and telephone are old here, 'everybody has 'em' " and went on to tell how "comes the word by telephone that Mr. Spencer (E. Maui Plantation) has met with an accident."¹¹⁷ The 1880-1881 directory, published in 1880, noted that the Hawaiian Telegraph Company "was established in 1877, and was the pioneer line of the Kingdom, and is up to the present time the only public line. It was originally worked with what are known as Morse Sounders, but, the business of the line not being sufficient to pay for experienced operators, telephones have been substituted."¹¹⁸ The company was certainly not very profitable; "income from business" in fiscal 1878-1879 was only \$579.90.¹¹⁹

It should be pointed out that the foregoing chronology, based largely on contemporary documents and newspaper reports, differs in some details from commonly published accounts. In 1928, the 85-year-old Dickey returned to Maui for a brief visit and told a reporter how, in 1873, he had rented some phones and connected his home and store, using telegraph wires. Soon thereafter, he added, he had extended the telephone line to Wailuku.¹²⁰ This version, except for the obviously incorrect date (three years before the invention of the telephone), eventually worked its way into a number of articles and history books.¹²¹ A careful comparison of the 1928 interview with the newspaper stories of 1877-1878, however, clearly suggests that Dickey was confusing his first telephone trials with the circumstances attending his earliest telegraph. Neither the place nor date of Dickey's first telephone has really been established.

Be that as it may, the telephone seems to have been introduced to Oahu soon after its appearance on Maui. In 1878, S. G. Wilder, Minister of the Interior, had a line installed between his government office and his lumber yard, and other private lines quickly followed. Organized service in Honolulu began during the late fall of 1880, and on December 30 the Hawaiian Bell Telephone Company was incorporated.¹²²

Honolulu telephones were converted to dial operation on August 28, 1910, but the last manual phones in Hawaii (at Kamuela and Kapoho) were not phased out until 1957.¹²³

Annoyed by the growing numbers of free-loaders who used merchants' phones for their private calls, the company (with the approval of the Public Utilities Commission) forbade free calls from stores and other public places, and in 1935 installed the first pay phones in Honolulu.¹²⁴

Interisland and transpacific communication. Several efforts to establish interisland telegraphic communication by submarine cable were initiated in the 1880's and 1890's. Two segments were actually laid, one connecting Pukoo, Molokai, with Napili, Maui, by December 10, 1889, and the other between Oahu and Molokai on April 3, 1890, but neither was ever put to successful use for interisland messages. The only cablegram sent and received was one transmitted from the cable ship 14 miles back to Koko Head on April 2, 1890.¹²⁵

Interisland radio telegraphy was initially tried at the end of the century. On October 31, 1899, Fred J. Cross acquired the right to use the Marconi

wireless for interisland communication. Cross and R. D. Silliman organized the Inter-Island Telegraph Co., Ltd., brought in Marconi experts, and built stations at Kaimuki and on Molokai, Lanai, Maui, and Hawaii.¹²⁶

A successful test of the system was conducted on June 16, 1900, linking the Executive Building grounds in downtown Honolulu with the Kaimuki station. Since batteries for operating the transmitter were held up in quarantine, the operators used an automobile belonging to T. L. Grant to furnish the necessary current. (Eighteen days later, Grant's electric horseless carriage figured in Hawaii's first automobile theft.) "At half past 12 o'clock Mr. [T.] Bowden . . . began to tick out a message. 'Hello! Is anybody out there?' This was the first message to wing its way across the city by the new system, the first to be sent by wireless telegraphy at any point west of the Rocky Mountains." The answer came: "Mr. Gear is here."¹²⁷

After numerous failures, the company finally succeeded in sending an interisland message on November 12, 1900, connecting Kaimuki (by way of a kite flown at Waialae) with Lae o ka Laau on Molokai. The first message, sent from T. E. Hobbs on Molokai to F. J. Cross on Oahu, was directed to the latter's wife and her Chinese cook: "To Mrs. Cross: Kindly kill Ah Sam for me because he did not pack up that small box nor the opener. My congratulations on your getting the first Molokai-Kaimuki wireless message."¹²⁸

The company opened for business on March 2, 1901, charging \$2.00 for a message not longer than ten words. The hours of operation at first extended only from 7 a.m. to 6 p.m. Service tended to be undependable, and the company went through several crises before beginning to solve its more serious technical and financial problems around 1907.¹²⁹

On December 28, 1902, the end of a Commercial Pacific cable was drawn up on land near the present site of the War Memorial Natatorium in Waikiki. At 8:41 p.m., January 1, 1903, the cable was put into operation, linking Hawaii and the Mainland with telegraphic service. The first message, sent from San Francisco, read: "Compliments of the season. Weather finer than California has ever known at this time." The westward extension of this cable, connecting Oahu with Midway, Guam, and the Philippines, was completed July 4, 1903.¹³⁰ Cablegram service to the Mainland was discontinued on November 9, 1951, and to Guam and beyond on November 17, 1951.¹³¹

"The first complete business wireless message between San Francisco and Honolulu" was recorded on September 21, 1908, when the Kahuku station of the Wireless Telegraph Company received a message from San Francisco intended for the steamship *Lurline* 700 miles off the coast. Earlier interceptions of this type had been either indistinct, fragmentary, or non-commercial.¹³²

During the summer of 1912, the Federal Telegraph Company, using a transmitter at Heeia, established the first commercial radio telegraph circuit to San Francisco. Service began at 10 p.m. (Honolulu time), July 27, 1912, with the arrival of a 3,000-word news summary for the *Advertiser*. Originally restricted to press stories and similar uses, the new wireless was opened to the general public on September 3. Only nighttime communication was possible at first,

but on November 16 the Heeia station was able for the first time to exchange daytime messages with the coast.¹³³

On November 2, 1931, the Mutual Telephone Company inaugurated interisland radio telephone service. The first call was by the seven-year old son of George H. Vicars of Honolulu to the boy's grandfather, James Webster on Hawaii, congratulating him on his birthday.¹³⁴

Mutual introduced radio telephone service with the Mainland a few weeks later. The first conversation between Honolulu and the Mainland took place November 20, 1931. The official inauguration of commercial service occurred December 23, 1931, with a conversation between Governor Lawrence Judd in Iolani Palace and Secretary of the Interior Wilbur at Washington, D.C. The first paid call was an incoming call from the Associated Press in New York to Riley H. Allen, editor of the *Star-Bulletin*.¹³⁵

The first submarine telephone cable connecting Hawaii with the Mainland was landed at Hanauma Bay in the summer of 1957 and put into service on October 8. The first commercial call was placed by Riley Allen to the Associated Press in New York.¹³⁶

Direct Distance Dialing was made available for calls from Oahu to the Neighbor Islands and Mainland beginning at 12:01 a.m., January 16, 1972. This innovation permitted callers to bypass long-distance operators and reduce charges appreciably.¹³⁷

Commercial radio broadcasting. Commercial radio broadcasts were first put on the air in Hawaii in 1922. Although radio telegraphy had been established in the Islands since 1900, the transmission of music and speech was not tried until October 1920, when M. A. Mulrony and T. C. Hall made an experimental broadcast. Scheduled broadcasts waited until May 11, 1922, with two Honolulu stations, KGU and KDYX, racing to be first on the air. Seven years later, on March 4, 1929, KGU re-transmitted a short-wave broadcast of President Hoover's inaugural ceremonies direct from Washington. An Island station first participated in a nationwide broadcast on December 25, 1930, when KGMB contributed to an NBC Christmas program. The first frequency modulation radio stations were KVOK and KAIM-FM, both licensed in 1953.¹³⁸

Television. The earliest Island television broadcasts appeared late in 1952. Test patterns were transmitted by KONA-TV beginning November 17. Scheduled programming was instituted by KGMB-TV on December 1. The first color transmission was by KHVH-TV, on May 5, 1957. Cable television was pioneered in Hawaii by Kaiser-Teleprompter, beginning April 20, 1961. Live television to and from the mainland was inaugurated November 19, 1966, when KHVH-TV used the Lani Bird communications satellite to bring the Michigan State-Notre Dame football game to Hawaii.¹³⁹

Radiophotos. The first transmission of photographs by radio from Hawaii to the mainland took place May 6, 1925. On that date, the Radio Corporation of America successfully radioed photographs of fleet maneuvers in Island waters from Oahu to New York by way of San Francisco, a total distance of 5,060 miles. Pictures and other graphic materials were eventually received as

well as transmitted in Honolulu, and early in 1926 the *Advertiser* published examples of the results in both directions.¹⁴⁰ Commercial radiophoto service between Hawaii and the mainland was introduced on April 8, 1942, by RCA Communications, Inc. Two years later the U.S. Army Signal Corps installed a radio telephoto unit to receive and transmit photographs of combat operations in the Pacific area. A similar facility built by the Navy at Pearl Harbor was used to send weather maps to Washington, D.C., beginning in 1947.¹⁴¹

Teletype service. The teletype made its first appearance in Honolulu in 1929, but the service was too expensive for most users.¹⁴² In February 1945, however, the *Advertiser* was able to announce the regular delivery by radio teletype of all United Press night leased wire news reports from the mainland.¹⁴³ In 1947 and 1948, the Mutual Telephone Company linked the major islands with a multi-channel, very high frequency radio relay system, which permitted the company to replace its radiotelegraph service (and operators) with radio-teletype. Hawaiian Airlines immediately made use of this innovation, operating "the first all-island radioteletype communication system ever installed in the territory" so as "to provide additional airplane safety and speed up reservations."¹⁴⁴ Transpacific teletype service was greatly expanded upon the completion of the first submarine telephone cable between Hawaii and California in 1957. By 1965, the Hawaiian Telephone Company was providing teletypewriter and alternate voice and data circuits to the mainland for two airlines.¹⁴⁵

Space age telecommunications. Artificial satellites greatly increased the range, scope and quality of long-distance communications.

The first satellite to pass near Hawaii was the Soviet Union's Sputnik, launched October 5, 1957. Radio signals from Sputnik were picked up at several Island locations as the satellite sped overhead.¹⁴⁶

An early application of the new technology was in weather satellites, which automatically photographed portions of the earth's surface and transmitted the results to receiving stations for processing and analysis. The first to be put in orbit was Tiros 1, launched from Cape Canaveral on April 1, 1960, and monitored by a group of Island meteorologists and other scientists atop a windy bluff at Kaena Point, Oahu.¹⁴⁷ The pictures taken by Tiros 1 were quite blurry, and it was not until 1964 when the first Nimbus weather satellite went into operation that clear satellite photographs of the Hawaiian Islands became available. Clarity was further improved by Tiros 10, launched in 1965, and Essa 2, in 1966. Some of the pictures taken by these satellites were reproduced in Honolulu newspapers, the first ever published of Hawaii from such high altitudes.¹⁴⁸ These photographs were of course intended for use in weather forecasting, and were made with remote sensing techniques. An equally interesting shot, taken with more conventional equipment, was the view of East Maui and the Big Island taken by Gemini 5 astronauts Charles Conrad and L. Gordon Cooper during an eight-day orbital flight in August 1965.¹⁴⁹

The Hawaiian Telephone Company provided communications services required for many of the satellite launches of the 1960s and early 1970s. Beginning in May 1960, the company supplied voice and teletype services to

the National Aeronautics and Space Administration (NASA) Project Mercury Tracking Station at Kokee, Kauai. The Honolulu Switching Center of NASA was operated by Hawtel personnel, who participated in all of the Apollo missions.¹⁵⁰

Transpacific telephone calls formerly made by radiotelephone or submarine cable were now sometimes expedited by satellites. Telstar, AT&T's communications satellite, was successfully placed in orbit July 10, 1962, and was used by Governor Quinn 17 days later in a telephone call that travelled from Honolulu to California by cable, then by radio relay to Maine, and via Telstar to London. On March 26, 1964, the *Star-Bulletin* telephoned Senator Warren G. Magnuson in Washington, D.C., by way of a signal bounced from the Syncom II satellite. The videophone added pictures to sound, and on May 18, 1971, Governor John A. Burns in Honolulu and Shinobu Ichikawa, vice president of Japan's Federation of Economic Organizations, in Tokyo, completed the first international videophone call via satellite.¹⁵¹

Computers were first linked to one another by telephone and radio in the mid-1960s. In 1965 the Federal Communications Commission authorized the Hawaiian Telephone Company to furnish Data-Phone service between Hawaii and the mainland, and this service—defined as the “transmission of data signals over exchange and long-distance communications networks”—was being advertised by the end of the year.¹⁵² With successive improvements, this service became “Datatel” in 1969 and “Dasnet” on January 3, 1978. Dasnet (for “Data Switching Network”) allowed Hawaii-based computers to communicate with more than 175 host computers and thousands of terminals linked to the Telenet mainland network. Unlike earlier services, it permitted the computers and terminals used in one system to interconnect with the computers and terminals of another.¹⁵³

On-line computer-based bibliographic searching came to Hawaii in the 1970s. The earliest large scale service of this type available in the Islands appears to have been MEDLINE, offered through the Hawaii Medical Library beginning in mid-July 1973. At that time MEDLINE contained 500,000 citations to articles in approximately 1,000 medical journals in the National Library of Medicine, and could quickly locate information by author, subject, age group, language, geographic area and ethnic group. The service made use of a terminal at the library, three computer systems, and a communications satellite.¹⁵⁴

Another important development of the 1970s was the collection of detailed data on the surface of the earth by the LANDSAT Remote Sensor. LANDSAT, first launched in July 1972, is an unmanned, polar earth-orbiting satellite which obtains and transmits information on surface conditions to receiving stations on the ground; stored in digital form on computer tapes, the data can be converted to photographic format. Between 1974 and 1978 the State investigated possible local uses of the LANDSAT imagery, and in December 1978 issued a preliminary report of its findings.¹⁵⁵ One urban test site, Honolulu and the Pearl Harbor area, and one rural test site, Hamakua and Kohala on the Big Island, were chosen for analysis, using 1973 LANDSAT data to map land use/cover and water classifications.

NOTES

- ¹ Ralph S. Kuykendall, *The Hawaiian Kingdom*, Vol. I, 1778-1854, *Foundation and Transformation* (Honolulu: University of Hawaii Press, 1968), p. 13; Bernice Judd and Helen Yonge Lind, *Voyages to Hawaii Before 1860* (Honolulu: University Press of Hawaii for Hawaiian Mission Children's Society, 1974), p. 1; Jim Gibbs, *Shipwrecks in Paradise: An Informal Marine History of the Hawaiian Islands* (Seattle: Superior Publishing Co., 1977), pp. 14-15.
- ² Kuykendall, pp. 23 and 42; Judd and Lind, p. 7; Gibbs, p. 47.
- ³ Judd and Lind, p. 17; Gibbs, p. 59. Judd and Lind show the name as *Balena* and give the *Equator's* registry as Nantucket; Gibbs shows *Balaena* and says the *Equator* hailed from Newburyport.
- ⁴ Judd and Lind, p. 18.
- ⁵ Anon., "Honolulu's First Wharf," HAA 1891, p. 143.
- ⁶ W. D. Alexander, "The Steamer 'Beaver,'" *Fourth Annual Report of the Hawaiian Historical Society*, 1896, pp. 9-10; PCA, April 18, 1903, p. 7; Edwin North McClellan, "The Visit of the Steamer Beaver in 1836," HA, May 12, 1928, ed. p.; anon., "'Fire-Ship' Excites Honolulu in 1846," PP, October 1936, p. 14; anon., "First Steamer to Visit Hawaii," PP, April 1938, p. 20; Kuykendall, p. 300; Gibbs, p. 82.
- ⁷ Anon., "First Steamer in Hawaiian Waters," HAA 1879, pp. 31-32; anon., "'Fire-Ship' Excites Honolulu in 1846," PP, October 1936, p. 14; Judd and Lind, p. 36.
- ⁸ Gibbs, pp. 121 and 123. The date is given on p. 140 as 1844.
- ⁹ Gibbs, pp. 121 and 123; Jesse C. Condé and Gerald M. Best, *Sugar Trains* (Felton, Calif.: Glenwood Publishers, 1973), pp. 13-14.
- ¹⁰ Gibbs, pp. 72-73.
- ¹¹ Gibbs, pp. 83-84. Gibbs also shows the tonnage of the *Akamai* as 120. The tonnage of the *Kilauea* is reported elsewhere as 414; see Ralph S. Kuykendall, *The Hawaiian Kingdom*, Vol. II, 1854-1874, *Twenty Critical Years* (Honolulu: University of Hawaii Press, 1966), p. 15.
- ¹² Kuykendall, Vol. II, p. 168; Gibbs, p. 90.
- ¹³ Kuykendall, Vol. II, pp. 169-170; Gibbs, p. 90.
- ¹⁴ Gibbs, p. 96.
- ¹⁵ Gibbs, p. 149; Charles A. Lockwood and Hans Christian Adamson, *Hell at 50 Fathoms* (Philadelphia and New York: Chilton Company, 1962), pp. xiii and 1-23; PCA, March 26, 1915, p. 1.
- ¹⁶ Gibbs, p. 94; "Shipping Anniversary," HSB, September 1, 1978, p. A-20.
- ¹⁷ Gibbs, pp. 95 and 167.
- ¹⁸ Gibbs, p. 172; Leslie Wilcox, "Hydrofoil Thrills Passengers Who Make Maiden Voyage," HSB, June 16, 1975, p. A-2.
- ¹⁹ Kit Smith, "Sea Flite sale final; service ends Jan. 15," HA, January 7, 1978, p. A-3; "Last Voyage?," HSB, January 16, 1978, p. A-13.
- ²⁰ Condé and Best, p. 13.
- ²¹ Condé and Best, p. 14; John B. Hungerford, *Hawaiian Railroads* (Reseda, Calif.: Hungerford Press, 1963), pp. 3-4.
- ²² PCA, February 12, 1881, p. 3; "History From Our Files," HA, January 13, 1941, p. 9; *Biennial Report of the Minister of the Interior . . . 1886*, Appendix J, "Road Surveyors' Report," p. xcvi.

- ²³ Richard A. Greer, "Honolulu in 1838," HJH, Vol. 11, 1977, pp. 3-38, espec. p. 5.
- ²⁴ *Reminiscences of Henry L. Sheldon of Persons and Events in the Hawaiian Islands from 1852 to 1863* (typescript in Archives of Hawaii, 1881), LIII, p. 3, and anon., "First Sidewalk," HAA 1932, p. 48. A later writer put Rawson's shop "on Fort Street about where Eastman Kodak Company is now"; see T. Blake Clark, "Honolulu's Streets," *Papers of the Hawaiian Historical Society*, No. 20, March 1939, pp. 5-25, espec. p. 14.
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- ²⁶ "Mauka Expressway Unit to Open Monday Morning," HA, November 8, 1953, p. 8; "Traffic Flows Smoothly on Mauka Expressway," HA, November 10, 1953, p. A-7.
- ²⁷ "Mauka Arterial Section Is Formally Dedicated," HA, January 6, 1954, p. A-5; *Territory of Hawaii Public Works Annual Report . . . Fiscal Year Ending June 30, 1954*, pp. 2-3.
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- ²⁹ Melvin and Ramsay, pp. 6, 11, and 22; "Farewell Forever to the Tram Cars," PCA, December 23, 1903, p. 3.
- ³⁰ Manuel G. Jardin, "Honolulu's First Electric Railway," *Hawaii Historical Review, Selected Readings* (Hawaiian Historical Society, 1969), pp. 270-273; Melvin and Ramsay, pp. 10, 23, and 25.
- ³¹ Melvin and Ramsay, pp. 11 and 19-22.
- ³² Hawaii State Department of Planning and Economic Development, *The State of Hawaii Data Book 1978: A Statistical Abstract* (November 1978), pp. 272 and 274.
- ³³ Richard A. Greer, *Downtown Profile: Honolulu A Century Ago* (Honolulu: The Kamehameha Schools Press, 1966), p. 21.
- ³⁴ Anon., "Gadding About the Archipelago," *The Sales Builder*, Vol. 10, No. 5, May 1937, p. 13.
- ³⁵ "Motor Propelled Bicycles Arrive," PCA, February 14, 1901, p. 3; anon., "Gadding About the Archipelago," p. 13.
- ³⁶ "The Automobile Makes Its Appearance in Honolulu," PCA, October 9, 1899, p. 9. Also described in "Automobile About Town," *Hawaiian Star*, October 9, 1899, p. 5.
- ³⁷ "First Automobile," *Evening Bulletin*, October 9, 1899, p. 1; also untitled item on p. 5.
- ³⁸ Anon., "Gadding About the Archipelago," p. 5.
- ³⁹ Joseph Feher, Edward Joesting, and O. A. Bushnell, *Hawaii: A Pictorial History* (Honolulu: Bishop Museum Press, 1969), p. 359; anon., "Gadding About the Archipelago," p. 5.
- ⁴⁰ "Ten Years Ago," HSB, April 25, 1941, p. 8; "In Memoriam—Doctors of Hawaii—V," *Hawaii Medical Journal*, Vol. 16, No. 2, November-December 1956, p. 192.
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- ⁴² William Norwood, "Motoring Around Oahu in 'Good Old Days' Was Adventure!" HSB, June 15, 1935, Sec. 3, p. 1; HAA 1909, p. 130; HAA 1933, p. 52.

- ⁴³ AH, photograph file, "Automobiles" folder. One is a proof of an advertisement by Milici Advertising Agency; another, a snapshot presented by "Mr. Chas. Walker (owner)"; and a third, a snapshot of E. H. Campbell and his car, presented by Horace Pope.
- ⁴⁴ Anon., "Empty Horse Collars," *The Sales Builder*, Vol. 11, No. 4, April 1938, p. 7.
- ⁴⁵ PCA, Dec. 21, 1899, p. 17; PCA, March 3, 1900, p. 3; PCA, Oct. 13, 1900, p. 6; PCA, Nov. 13, 1900, p. 2; PCA, March 7, 1901, p. 5; PCA, March 28, 1901, p. 1; PCA, April 3, 1901, adv., p. 5; PCA, Nov. 15, 1901, p. 13; PCA, Dec. 23, 1901, p. 15; PCA, Dec. 31, 1901, p. 3, entries for March 9 and June 24.
- ⁴⁶ "A Juggernaut," PCA, March 20, 1900, p. 10.
- ⁴⁷ PCA, March 3, 1900, p. 3.
- ⁴⁸ "Louis Marks Killed By Auto," PCA, June 5, 1906, p. 1. See also EB, June 5, 1906, p. 1; HG, June 5, 1906, p. 1; *Hawaiian Star*, June 5, 1906, p. 1; HG, June 8, 1906, p. 2; anon., "Empty Horse Collars," p. 4.
- ⁴⁹ See, for example, PCA, Jan. 18, 1906, p. 1; PCA, March 1, 1906, p. 2; PCA, April 23, 1906, p. 9; PCA, June 3, 1906, p. 1; PCA, Oct. 29, 1906, p. 1. For the number of automobiles on Oahu, see Schmitt, "Automobile Ownership in Hawaii Before 1931: Dates and Data," p. 431.
- ⁵⁰ "Corcoran Made the Wheels Go Round to the Tune of Twenty-Five Dollars," PCA, July 6, 1900, p. 6.
- ⁵¹ "Merchant Street Is Being Macadamized," PCA, August 3, 1900, p. 3.
- ⁵² "Four Flasher Will Displace Overhead Light," HSB, February 20, 1936, p. 1; HSB, February 21, 1936, photograph on p. 1; "Traffic Control Device Started," HSB, February 24, 1936, p. 1.
- ⁵³ "Isles' First Parking Meters Being Installed at Airport," HSB, August 2, 1951, p. 1; "Parking Meters Now Operating at Honolulu Airport," HA, August 19, 1951, p. 10.
- ⁵⁴ Information provided by the City and County of Honolulu Department of Transportation Services, January 1973; "More Parking Meters to be Installed Monday," HA, February 16, 1952, Sec. II, p. 1.
- ⁵⁵ Honolulu Department of Transportation Services, January 1973.
- ⁵⁶ *Diary of Andrew Bloxam*, Bernice P. Bishop Museum Special Publication 10 (Honolulu, 1925), p. 55; Edward Joesting, *Hawaii, An Uncommon History* (New York: W. W. Norton & Co., Inc., 1972), pp. 107-108; Edwin North McClellan, "Aviation in Paradise," HAA 1940-1941, pp. 73-74.
- ⁵⁷ William J. Horvat, *Above the Pacific* (Fallbrook, Calif.: Aero Publishers, Inc., 1966), pp. 14-15; "The Balloon," PCA, March 4, 1889, p. 3; "An Aerial Flight," PCA, March 11, 1889, p. 3; "The Balloon Ascension," PCA, July 5, 1889; "The Balloon Ascension," DB, July 5, 1889, p. 3. Horvat incorrectly dates the second attempt March 11 instead of March 9 and gives its distance as "two or three thousand yards" instead of 300.
- ⁵⁸ Horvat, pp. 15-17.
- ⁵⁹ Horvat, pp. 21-25.
- ⁶⁰ Horvat, pp. 26-27.
- ⁶¹ Horvat, pp. 27-28.
- ⁶² Horvat, pp. 28-29.
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- ⁹⁰ Kuykendall, Vol. I, p. 105; A. Grove Day and Albertine Loomis, *Ka Pa'i Palapala, Early Printing in Hawaii* (Honolulu: Printing Industries of Hawaii, 1973), pp. 3-4.

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- ⁹² Day and Loomis, p. 7.
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